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ABSTRACT

The purpose of this 6-week training institute was to orient a group of selected black undergraduate students to the nature of and general procedure related to the process and methodology of educational research. The program was specifically designed to: (1) enable the students to identify pertinent educational problems and to formulate appropriate questions for research and policy decisions; (2) acquaint the students with the general statistical procedures used in analyzing the nature of problems involved in the educational process; (3) provide an opportunity for this group of undergraduate students to participate in the conceptualization, development, and evaluation of an educational research project; and (4) identify a pool of qualified black students who are interested in pursuing graduate studies in educational development or in other research related areas. The participants showed significant gains in both their knowledge of and attitude toward education research. As a result, 10 participants have been admitted to graduate programs in educational development and/or other research related areas.
 (Author/HS)

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Final Report

Project No. 00714

Grant No. OEG-0-70-4780(502)

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**A PROGRAM TO INCREASE EDUCATIONAL RESEARCH
AWARENESS AMONG UNDERGRADUATE STUDENTS IN
PREDOMINANTLY BLACK INSTITUTIONS**

June 1971

U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

Office of Education

National Center for Educational Research and Development
(Regional Research Program)

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A Program to Increase Educational
Research Awareness Among Undergraduate
Students in Predominantly Black Institutions

James B. Gunnell/Edgar G. Epps/Frank S. Black
Division of Behavioral Research
Carver Research Foundation

Tuskegee Institute, Alabama 36088

June 1971

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
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Abstract

The purpose of this six-week training institute was to orient a group of selected Black undergraduate students to the nature of and general procedure related to the process and Methodology of educational research.

The program was specifically designed to:

- a) enable the students to identify pertinent educational problems and to formulate appropriate questions for research and policy decisions,
- b) acquaint the students with the general statistical procedures used in analyzing the nature of problems involved in the educational process,
- c) provide an opportunity for this group of undergraduate students to participate in the conceptualization, development, and evaluation of an educational research project,
- d) identify a pool of qualified Black students who are interested in pursuing graduate studies in educational development or in other research related areas.

The objectives of the program were accomplished through student participation in two courses (Research Methodology, and Statistics for the Behavioral Sciences), group study projects and a tour of educational research facilities (local - Tuskegee Institute campus and Atlanta, Georgia).

The participants showed significant gains in both their knowledge of and attitude toward education research. As results of this institute ten participants have been admitted to graduate school to begin graduate studies in Educational Development and/or other research related areas.

CHAPTER I

Background for the Institute

Introduction

The continued growth of the number of new and revised educational programs has increased the demand for competent people in all areas of educational development. Many of these programs are aimed specifically at the improvement of the academic performance of children from lower socio-economic families. A large proportion of these children are from the Black community or from other minority groups.

Many academicians, especially Black educators, hold that educational problems and programs related to Black children should be studied, at least in part by Black researchers. Although the pool of Black educators trained in research and evaluation has gradually grown larger over the past few years, there still remains a critical shortage of Blacks trained in these areas. The 1970 roster of the American Educational Research Association Special Interest Group "Research Focus on Black Education" revealed a total membership of 80 Blacks, of which approximately one third are students. Although employed in educational research or related areas, less than fifty percent of this group has had extensive training in educational research methodology and statistics.

At present the conceptual frame for studying educational problems and programs has the following orientation: Research, Development, Dissemination and Evaluation (RDD&E). Admittedly, development and dissemination as areas of study are relatively new to all, but these critical areas are even more unknown to the Black undergraduate student who may be planning his graduate studies. The intent of this institute was to increase educational research awareness among undergraduate students in predominantly Black institutions. This institute has stimulated interest in and contributed to the increased number of Black students desiring to pursue graduate studies in educational research and related areas.

Purpose and Objectives

The purpose of this six-week training institute was to orient a group of selected Black students to the nature of and general procedures related to the process and methodology of educational research. The primary objectives of the program were as follows:

1. To enable the students to identify pertinent educational problems and to formulate appropriate questions for research and policy decisions.
2. To acquaint the students with the general statistical procedures used in analyzing the nature of problems involved in the educational process.
3. To provide an opportunity for undergraduate students to actually participate in the conceptualization development and evaluation of an educational research project.
4. To identify a pool of qualified Black students who are interested in pursuing graduate studies in educational development or in other related areas.

Educational Significance

The vast number of new, different or revised educational programs that are being introduced in the nation's schools and numerous programs associated with various community agencies (for example model cities programs) demand an increased number of persons competent in RDD&E. In spite of the increased efforts of the Bureau of Research (USOE) and numerous other governmental and non-governmental agencies to alleviate the shortage of educational researchers, there still remain far too few Black people trained in this area. With the possible exception of evaluation, the other areas of educational development, namely program development and dissemination, are practically unknown to the Black undergraduate student.

Through the experiences that the students received as a result of their participation in this summer program, interest was aroused in the process and methodology of educational research. Upon return to their respective institutions these students acted as a catalyst stimulating the interest of their peers in relation to educational research.

Since the participants, for the most part, were primarily juniors, an introduction to educational research by way of the summer institute encouraged many of these students to enroll in research related subjects during their senior year in college.

CHAPTER II Procedures

The Instructional Program

The stated purpose of the institute was accomplished by means of an instructional program, components of which were designed to meet specific objectives. The institute program was conducted for a duration of six weeks, during which time two hundred ten (210) clock hours were devoted to instructional activities. Table I summarizes the time distribution of each instructional activity.

Table I
Summary of Instructional Activity
Time Distribution

	Daily	Total hours
1. Total group presentation		
a. Introduction to educational research Methodology	1 1/2 hr.	45
b. Introduction to statistics for the behavioral sciences	1 1/2 hr.	45
2. Independent study activities (participation in ongoing educational research project)	4 hr. /M-Th 2 hr. /F	96 12
3. Evaluation and Integration Seminar	2 hr weekly Friday	12
Total		<hr/> 210

Research Methodology. The first objective of the institute was realized through the student's participation in a course in Educational Research Methodology. This was an introductory course designed primarily to acquaint the students with the process of research in education.

Statistics for the Behavioral Sciences. Objective two was accomplished by relating the student with concepts discussed to actual research projects. These projects were conceptualized and implemented by the students in the research methodology component and the practicum component of the instructional program. Utilizing the acquainted statistical tools the students analyzed data and interpreted the results of the projects conducted as a part of their practicum.

Educational Research Project (Practicum). The third objective was met through the students participation in a research project. Because of lack of time to work with each student individually, the students were divided into three groups. Each group used the concepts of research methodology in conjunction with their knowledge of statistics in order to define the problem, plan, conduct and evaluate a research project.

Tour of Educational Research Facilities. The participants had an opportunity to tour as well as take part in, numerous activities conducted by the Behavioral Science Research Component of the Carver Research Foundation and the Computer Center at Tuskegee Institute. A tour was also conducted of several educational agencies in the Atlanta, Georgia area. These tours proved quite beneficial in that the participants had an opportunity to observe educational researchers in the field.

Consultants. The instructional program was greatly enhanced by the use of consultants. In addition to the valuable in-pu of local personnel, Dr. Sylvia Obradovic's discussion of Research in Educational Development Laboratories and Dr. Betty Morrison presentation on Educational Research in the University Setting were very informative.

As indicated in the Chapter IV findings, the objectives of the institute were satisfactorily accomplished through the proposed instructional program.

Participants

The program (staff and facilities) was adequate to accommodate 32 participants. This number is in keeping with that suggested by the Bureau of Educational Research related to undergraduate research training programs. The participants were selected from 12 predominantly Black institutions, 10 of which are located in the southern area of the United States.

In order to select students that were most likely to successfully pursue a graduate program in educational research the following selection criteria were established:

1. The student must be in "good" standing in his respective institution.

2. The student must have expressed a desire to pursue graduate studies.
3. The student must be recommended by three faculty members from his institution.

A brochure stating the purpose and objectives of the institute, describing the nature of the instructional program, student selection criteria and other detailed information relating to the institute was mailed to deans of College of Education, institutional research director and other selected personnel on the campuses of predominately Black institutions. These selected individuals recommended to the director potential participants for the institute. From those recommended, the director and staff relying primarily on the students expressed reason for desiring to participate and the letters of recommendation identified participants.

Due to financial constraints, the proposal requested support for only twenty-two (22) undergraduate students. However, it was realized that at least 32 students could participate in the training program at a minimal increased cost to the host institution. For this reason 10 additional students could have participated in the program if they were able to pay their own expenses (tuition, room and board and fees). However, no students applied under these conditions.

CHAPTER III

Methods of Evaluation

In order to ascertain the extent to which the objective(s) of the Research Institute were met, an attempt was made to look at some specific dimensions of the institute. The dimensions and the evaluation tools utilized to index the success or failure of the program are catagorized in the following manner:

<u>Program Dimensions</u>	<u>Evaluation Tool</u>
Cognitive Domain	Research Knowledge Index Grades
Affective Domain	Research Orientation Index
Program Development	Process Evaluation; Fletcher Course Assessment Form
Identification of Black students	Student Follow-up (Follow-up Questionnaire; Campus Visitations)

Throughout the implementation of the institute there was constant monitoring of student and program development issues. The purpose of this extra sensitivity to students and program development sprang from the felt need of the Director and Staff members to anticipate any deviations from the stated objectives. The process evaluation cited below (see page 8) played an important role in this monitoring effort.

*Research Knowledge Inventory (RKI) and Research Orientation Inventory (ROI)

The RKI instrument provided information relevant to the extent to which research knowledge of the students was affected by the institute. The items included in the RKI were developed to evaluate student knowledge within the research domain.

"The research domain was divided into six major areas:

1) Foundations of Research; 2) Planning and Development of Research; 3) Research Design; 4) Methods of Observation and Data Collection; 5) Measurement; and 6) Statistics.

* Joseph Sakumura, An Analysis of an Experimental Educational Research and Development Program for Talented Undergraduate Education Students, Ph. D. thesis, The Ohio State University, 1969.

Questions for each substantive area measuring either knowledge or application type skills were constructed." (Sakumura, 1969). The test consisted of 50 multiple choice items.

The ROI performed a similar function in reference to student orientation or attitudes concerning the field of educational research. Both instruments were administered on a pre-test and post-test basis.

Fletcher Course Assessment Form

In order to gain the valuable perceptions of students as they related to the implementation of the program the Fletcher Course Assessment Form was used. This form was also utilized with the RKI and ROI in a similar program at the Ohio State University. This form was administered after the final examinations.

This form consisted of five factors. Briefly, these factors are:

1. The Level of Difficulty factor which measures a student's judgment about the relative difficulty of the course on a continuum from difficult to easy.
 2. The Course Content scale which indicates a student's perception of course content on a continuum from emphasis on thinking to emphasis on rote memory.
 3. The Instruction factor which taps a student's perception of all facets of instruction on a continuum from excellent to poor.
 4. The Examinations scale which provides a measure of a student's judgment on this factor on a good to poor continuum.
 5. The General Evaluation factor indicates how a student feels generally about the course on a continuum from excellent to poor.
- (Sakumura, 1969)

Student Grades

Because the students desired to have the credits earned transferred to their home institution it was necessary to derive an academic grade. Although the staff recognized their

necessity, the notion of grades was deemphasized. The follow procedure for grading was employed.

Mid-term and final exams in statistics and methodology were used as the primary basis for deriving student grades. Since the nature of the institute was unique in its purpose, these instruments were locally designed by the institute staff. The purpose was to measure the academic achievement of the institute participants over a period of six weeks. Specifically, student grades were determined by averaging the grades earned in the statistical and methodological components of the research institute. Wherever there was any doubt concerning a student's grade, the student's performance in the practicum component of the institute was influential in arriving at a grade decision.

Process Evaluation

Communication between the faculty and the students was aided greatly by especially two practices: weekly evaluative seminars and personal interviews with students.

Through the evaluative seminars concerns of the students were aired and solutions to problems were sought in the presence of all participants immediately involved with the program. One outcome of this type of interaction between faculty and students in this program was a modification in the hourly schedule of the daily classes. The class meetings were altered in order to allow the students to have a longer break period between classes as well as to reduce the total time spent in the classroom daily. With this alteration, the students seemed more energetic and less fatigued in their classes, especially, those held during the afternoon.

The individual interviews were held by the director primarily but not exclusively. Their purpose was essentially embedded in an attempt by the faculty to anticipate and provide help with any personal problems of students. Further, in these meetings students were also encouraged to attend graduate school.

Student Follow-up

The student follow-up consisted of two parts: (1) The Follow-up Questionnaire and (2) Campus Visitation. The Follow-up Questionnaire consisted of thirty-four items which provided the program director with specific information concerning participants' date of graduation, type of studies planned

in graduate school, and the graduate schools to which they has submitted applications for graduate work. The campus visitation was limited to selected universities primarily as a function of time constraints under which the program director found himself.

Participants and interested students who were not program participants were contacted. Information concerning The Ohio State University program and sources of financial aid was related to these students. Students who were in need of application forms were supplied with them and were aided in their interpretation and completion by Dr. Gunnell.

Research Awareness Workshop

The Research Methodology Institute has as its purpose the orientation of Black students to the nature of and general procedures related to the process and methodology of educational research. One of its primary objectives was to identify capable Black students who were interested in studying at the graduate level in the area of educational development or related areas. As a result of this institute fourteen undergraduate students reported their plans to undertake graduate studies in the general area of Research, Development, Dissemination and Evaluation. A number of these students are currently in graduate schools. Others plan to enter at a later date.

In order to continue the positive reinforcement of these students and to ease the transition they will have to make from predominantly small Black colleges to large and predominantly white universities, a workshop was held at the Ohio State University. The assumption here is that many of the problems faced by Black students at other universities of similar size and demographic make-up are much the same as those often encountered at The Ohio State University. Identifying sources of financial aid, housing discrimination, and the lack of adequate counseling exemplify these potential problems. Also, the fact that a number of these students will be attending graduate school at The Ohio State University contributed to its selection as the host university.

Briefly, the workshop may be perceived as being divided into two awareness segments:

- (1) Awareness of the professional roles within the general area of educational research, and

- (2) Awareness of potential problems students may face in making the transition from undergraduate school to graduate school.

The first awareness section was primarily the responsibility of the director and staff of the research institute. The second awareness segment was undertaken by representatives of The Ohio State University Black Graduate Student Caucus. Hopefully, as a result of this workshop these students will be better prepared to handle many of the problems which may emerge with respect to their graduate school experience.

CHAPTER IV

Results

RKI and ROI

The RKI and ROI indicated a significant difference between pre- and post-test means. This outcome provides strong support for the following thesis:

At least one way of identifying potential Black researchers (that is Black undergraduate students who are interested in, feel a need for and who are capable of developing skills in the area of educational research) is to expose them to the nature of educational research as well as its purposes, accomplishments and potential contributions to society via a program such as the Tuskegee Research Institute - 1970.

Fletcher Assessment Form (Table II and Figure 1, pages 13 - 14)

Unfortunately, the Fletcher Form remains in a developmental stage and norms are not available. Thus, the opportunity to make relatively absolute statements concerning the results of this form is thwarted.

Nevertheless, given this limitation, comparative statements are helpful in interpreting findings of this nature. However, before we make these comparative statements certain incongruencies between the Tuskegee Program and the OSU program should be noted.

1. The Tuskegee program lasted six weeks in contrast to the full quarter of the OSU program.
2. The Tuskegee Program was a summer session undertaking in contrast to the OSU program which was implemented during the regular academic year.

The following observations have been noted:

1. The Tuskegee students found their program more difficult than the OSU students. This may be a function of the fact that a few of these students had never been to summer school before. Consequently there was a needed adjustment to the accelerated pace of the summer program.

2. Tuskegee students as opposed to the OSU students felt that the content of the program emphasized memory more than thinking. Possibly, again the accelerated pace of the summer session and the scope of material that was covered contributed to this perception. It should be noted that the faculty emphasized at the beginning and during the program that memorization of isolated facts was not the objective of the institute. By way of various types of class assignments and experiences, the faculty sought to aid the students in perceiving the various inter-relationships of research concepts as opposed to rote memorization of isolated facts.
3. Tuskegee students rated the instruction higher than OSU students. This may be accounted for partially by the fact that four lecturers taught the OSU course whereas with the Tuskegee project one lecturer taught each component throughout the 6 week period.
4. Examinations were rated poorer by Tuskegee students than by OSU students. With both groups this was the lowest rated of the five factors. Certainly Sakumura's comments are apropos here.

"These results may be explained by the fact that students took the Fletcher Form immediately after an examination. Anti-examination feelings were probably high. Nevertheless, it is questionable whether student judgments about examinations will ever be high. Who likes to be tested and who can be objective about a process which affects one personally?" (Sakumura, 1969)
5. Tuskegee and OSU students ratings on the general evaluation factor were more positive than their ratings on the other four factors.

TABLE II

Fletcher Form: Means and Standard Deviations
Of Tuskegee Research Institute (TRI) and the Ohio State
University (OSU) Undergraduate Students

	Difficulty	Content	Instruction	Examination	General Evaluation
TRI (n = 22)					
Mean	41.35	32.88	41.35	29.88	40.92
S. D.	7.38	7.49	5.70	12.60	7.74
*OSU (n = 20)					
Mean	37.15	37.85	37.50	34.15	41.35
S. D.	6.48	8.09	9.58	10.86	7.98

*1st quarter students of the 1968 - 1969 program.

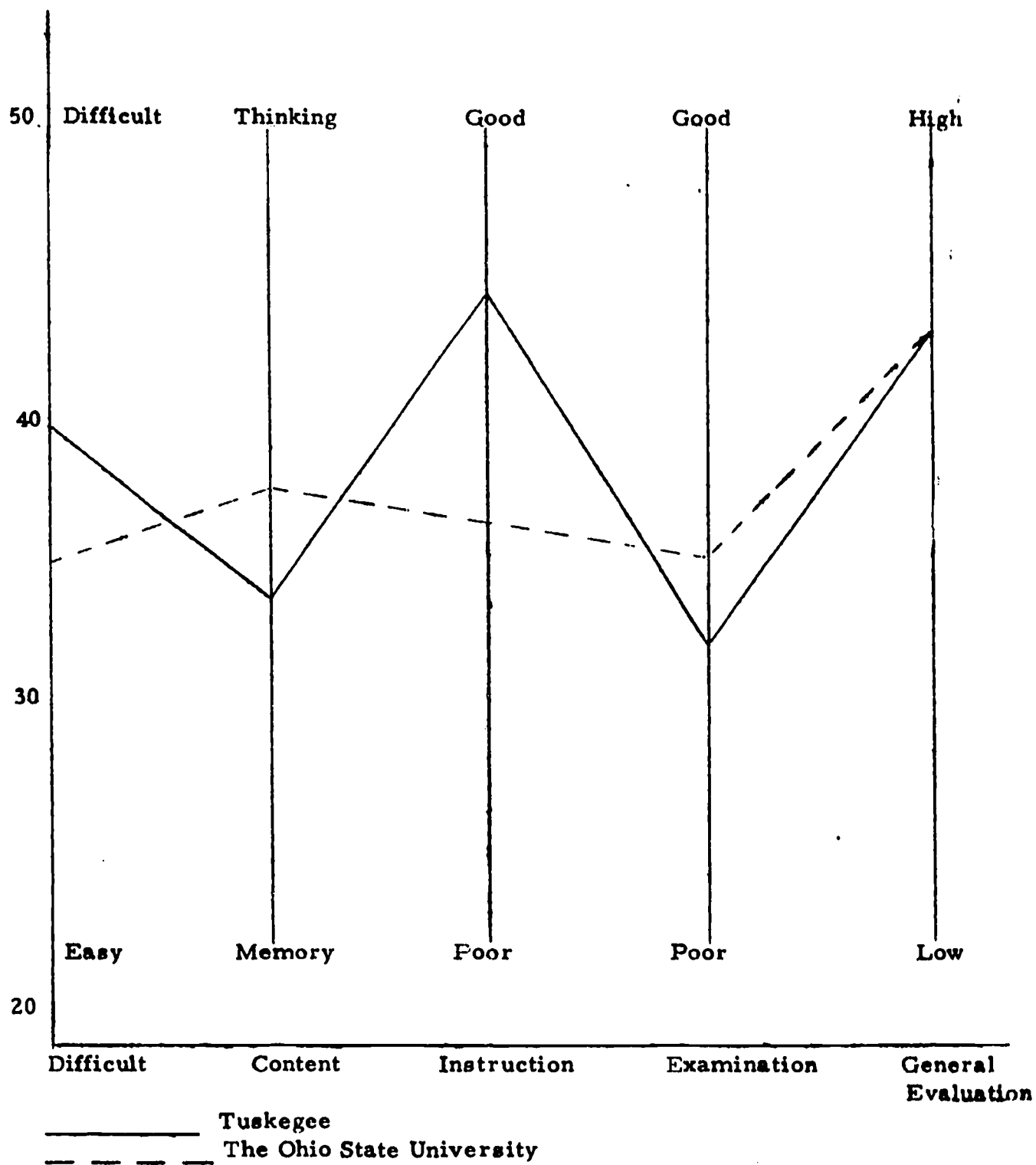


Figure I
Fletcher Form: Plotted Means
of Tuskegee Research Institute
and The Ohio State University Undergraduate Students

Student Follow-up

In early November, 1970 a follow-up questionnaire was mailed to each of the twenty-two participants. Supplementing this endeavor, the director to date has visited the participants on four of the campuses from which students were selected. The data at present reveal the following information. The four participants who had completed their senior year prior to the summer program, are presently enrolled in graduate school. They all receive financial assistance. The institutions and nature of support are as follows. Syracuse University, research assistant; Miami University (Ohio), Correta King fellow; Atlanta University, University fellow and the University of Wisconsin (Green Bay), source of support uncertain.

Since these students had applied for admission and for the most part had been accepted in graduate school prior to the summer program, there is a degree of uncertainty as to the influence of the program in the decision of their graduate pursuit. Two of these students, nevertheless, are pursuing educational research methodology as a corollary area.

The remaining 18 students returned to their home campuses to complete the senior year. All but two of these students will complete the requirements for graduation by the end of the spring term. The two participants failing to complete the requirements were first semester juniors who will graduate in January, 1972.

The follow-up findings in relation to the participants who are planning to enter graduate school in the fall of 1971 are indicated in Table B below.

TABLE B			
Participants' Selection of Institution and Choice of Area of Study*			
Number of Participants	Choice of Institutions	Area of Study	
		Major	Minor
1	Stanford University	Clinical Psy.	Res. Methodology
1	Univ. of Michigan	Sociology	Res. Methodology
1	Morgan State	Undecided	Undecided
1	Atlanta University	Undecided	Statistics
1	The Ohio State Univ.	Educ. Dev.	Sociology
1	The Ohio State Univ.	Educ. Dev.	Special Ed.
4	The Ohio State Univ.	Educ. Dev.	Research and Evaluation

* The students who will not be enrolling in graduate school 1971 are not included.

Four of the six students who will not be enrolling in graduate school in the fall plan to begin their graduate work in one to two years. Two of these participants will be in the area of educational development at the Ohio State University.

In addition to the identification of the above students interested in pursuing graduate work, the experience at Tuskegee provided us with an opportunity to contact and acquaint a number of other students with the need for more Blacks trained in the area of educational research. As a consequence of this opportunity, an additional four persons interested in pursuing graduate studies in this area were identified. These individuals will be entering the graduate school at The Ohio State University in the fall of 1971 (two entering the Ph.D. program and the remaining two entering the Masters Program).

With respect to those students who plan to enroll at The Ohio State University, Dr. Gunnell has visited their campuses, supplied them with the necessary admission forms, alerted the dean of the Graduate School that they will be applying and is at present arranging for their complete financial package.

In conjunction with other indications of success of the institute, the director and staff are of the opinion that the identification of 14 students who will pursue graduate work in the general area of RDD&E is the paramount accomplishment of this research institute. A further testimony to the effectiveness of a research institute of this nature is the fact that 88% of these participants identified indicated that they would not have pursued graduate studies in this area had they not been exposed to this awareness program.

Awareness Workshop

The proposed research awareness workshop was conducted at The Ohio State University April 23 - 25, 1971. The students met with faculty members and graduate students at the university. The discussion for the most centered around academic programs, financial assistance, living accommodations and faculty advisement. While on campus the student had an opportunity to visit many of the Educational Research related centers on campus and in the Columbus areas. The participants were able to acquire first hand, the answers to many of their questions and concerns relating to the pursuit of graduate studies in educational research related areas.

CHAPTER V

Conclusions and Recommendations

Conclusions

It is apparent from the findings that:

- (1) A research institute conducted with the particular goals and objectives as defined here is a viable way of identifying a pool of students with the potential for pursuing graduate studies in educational research or related areas.
- (2) In spite of its limited resources, Black colleges are capable of providing adequate educational research experiences at the undergraduate level.
- (3) The selection of participants upon the completion of their junior year of their undergraduate academic training proved to be appropriate in that the participant then would upon return to their respective campuses:
 - a) pursue additional course work in research related fields.
 - b) positively influence other students, with respect to the pursuit of careers in educational research.
 - c) provide the institute staff with an opportunity to conduct follow-up activities to further enhance the probability that they will select research as their career choice.

Recommendations

Based on the findings and the conclusions of this report the following recommendations are made:

1. The Federal Government should continue to fund the research institute on an annual basis.
2. The Research Institute should be expanded to include:
 - (a) Multiple institutes operating simultaneously at different locations or colleges,

- (b) groups of participants numbering 20 - 25 in size.

It is further recommended that:

1. A greater emphasis be placed on affective objectives,
2. Participants be exposed to the utilization of computers in educational research.

Audiences to be Served

The nature of the instructional program, the procedure for participant selection, the evaluative methods and results and other pertinent facets of the institute are of significant value to a diversity of institutions and agencies. Paramount among these agencies are:

1. U.S. Department of Health, Education and Welfare
Office of Education, Bureau of Research.
2. Directors of RDD&E programs.
(Federally, state or Institutional supported)
3. Black Universities and Colleges that are interested in instituting research programs.
4. Educational Research Related Professional Organizations (e. g., A. S. A.)

Upon approval of the final report, a summary of the research Institute and findings, conclusions and recommendations will be made available to these and other agencies that are interested in research training programs aimed primarily at Blacks and other minority groups.

APPENDICES

APPENDIX

- A. INSTITUTE STAFF
- B. INSTRUMENT DEVELOPMENT
- C. DESCRIPTION OF SITE

APPENDIX A

Institute Staff

A. Director and Instructor of Educational Research Methodology

Dr. James B. Gunnell, Assistant Professor of Education, Faculty of Educational Development, The Ohio State University, Columbus, Ohio: B.S. degree, Mathematics, Virginia State College, Petersburg, Virginia, 1956; M.S. degree, Mathematics, University of Notre Dame, South Bend, Indiana, 1962; Ed.D. Educational Research and Statistics, New Mexico State University, Las Cruces, New Mexico, 1969.

B. Associate Director and Director of Student Research Activities

Dr. Edgar G. Epps, Associate Director, Carver Research Foundation (Division of Behavioral Science Research), Tuskegee Institute; B.A. degree, Sociology, Talladega College, Talladega, Alabama; M.A. degree, Social Science, Atlanta University, Atlanta, Georgia, 1959; Ph.D., Sociology, Washington State University, 1959. Presently employed at the University of Chicago.

C. Instructor of Statistical Procedures in the Behavioral Sciences

Frank S. Black, Ph. D. Candidate, Education Evaluation and Research, Faculty of Educational Development, The Ohio State University; B.S. degree, Elementary Education, Central State University, Wilberforce, Ohio, 1967; M.A. degree, Sociology 1969, The Ohio State University, Columbus, Ohio.

D. Instructional Assistant (Robert Talley)

This student served as material preparation specialist during the program planning phase and as instructional assistant during the training program.

E. Secretary (Trudy Bradley)

Regular Secretarial duties.

F. Consultants

Dr. Betty Morrison Assistant Professor of Education,
Case Western Reserve University, Cleveland. (Educa-
tional Research and Statistics). Presently Associate
Professor of Education University of Michigan.

Dr. Sylvia Obradavic (Educational Research and Program
Development) Forwest Regional Laboratory, Berkeley,
California.

APPENDIX B

Instrument Development

The Research Knowledge Index (RKI) and Research Orientation Index (ROI), were developed by James W. Altschuld and Joseph Sakumura for the purposes of evaluating Research and Development programs at The Ohio State University. Some preliminary work on several of the instruments was done by Okorodudu (ROI) and Stufflebeam and Worthen (RKI).

Credits are as follows:

Original work for ROI

1. Okorodudu, C. Development of a Research Attitudes Scale. An unpublished manuscript.

Revised 52 item ROI should be credited to

2. Sakumura, J.S. and Altschuld, J.W. Research Orientation Index. Copyright, March 1970. Copyright to be found in Altschuld, J.W. A Study of An Experimental Training Program in Educational Research and Development - The Measurement and Analysis of Factors Predictive of Graduate Student Success. Ph.D. Dissertation, The Ohio State University, 1970.

3. Stufflebeam, D.L. and Worthen, B.R. Educational Research Competency Test. Geauga County School District. Geauga, Ohio, 1968.

Revised New RKI should be credited to

4. Altschuld, J.W. and Sakumura, J.S. Research Knowledge Index.

APPENDIX C

Educational Research Training Capability of the Selected Site

Tuskegee Institute is a co-educational, privately controlled, professional, scientific, and technical institution, with regional accreditation from the Southern Association of Colleges and Schools, and with specialized approval for several of its programs -- nursing, dietetics, veterinary medicine, and teacher education -- from their respective national professional associations. This non-sectarian, independent institution -- founded by Booker T. Washington in 1881 -- is located in Tuskegee Institute, Alabama, one mile west of the town of Tuskegee -- which can be reached via three U.S. Highways, 80, 29, and Interstate 85.

Thirty-two (32) degree - granting courses of study constitute the curricula of seven major areas of instruction -- College of Arts and Sciences, Schools of Applied Sciences, Education, Engineering, Veterinary Medicine and Department of Physical Education. Graduate programs are offered in the College of Arts and Sciences, and in the Schools of Education, Engineering and Applied Sciences.

The Tuskegee Institute Library System consists of the Main Library and departmental libraires in the Schools of Architecture, Engineering, Nursing and Veterinary Medicine. The main library, named for the late Dr. Hollis Burke Frissell, a second principal of Hampton Institute, was completed in May, 1932. It is a fireproof three-story brick structure of the Renaissance style.

The libraries provide bibliographies, books, journals, newspapers, microfilm, phonodiscs and other materials necessary to obtain the objectives of the college.

The collection in all libraries numbers approximately 155,000 volumes. More than 1500 periodicals are received through purchase and gift subscriptions, and approximately 75 newspapers, both domestic and foreign, are received.

The Division of Behavioral Science Research

The research activities of the Carver Research Foundation have been expanded recently to include the social sciences and related areas. Over the years, Tuskegee has had a distinguished

history of involvement in organized social research and data compilation through the Rural Life Council, the Department of Records and Research, and the Office of the Director of Research. In September, 1963, the Department of Social Science Research was established to provide greater continuity and to create a more definite conceptual focus for research in the social sciences. The research activities of the Department were devoted primarily, although not exclusively, to the study of the Negro, Race Relations, and the South. One of the most important innovations initiated by the Department was the Tuskegee Area Study which provides students with first-hand experiences in survey research.

In September, 1967, the Division of Behavioral Science Research of the Carver Research Foundation was established by a grant from the Ford Foundation. The inclusion of the Behavioral Sciences in the Carver Research Foundation makes it possible for faculty and students in other departments to engage in research activities on the same basis as those in the natural sciences.

The Division of Behavioral Sciences is continuing its support of the Tuskegee Area Study, thereby providing social science majors with valuable research experience. The focus of research in the Division includes race relations, student attitudes and aspirations, and problems related to poverty and its alleviation. Much of the research in the Division is supported by grants and contracts from government agencies and private foundations.

Computer Center

A full staff of teaching professors of computer science, experienced programmers and data processing personnel are available without cost to faculty and graduate students. Mathematical statistical help is also available to the faculty and graduate students at no cost.

Data Processing Equipment

The following equipment is available:

1. IBM Key Punches
2. IBM Counter/Sorters
3. IBM 1620 Computer

4. Teletype and Dataphone used as a computer time-sharing terminal with access to GE 265 Computer in Atlanta, Georgia.
5. Two electronic and several mechanical calculators.

Only the use of the time-sharing equipment would involve an expenditure by the research institute. The time-sharing equipment would be most useful in teaching computer programming and computer applications for educational research. Approximate cost: \$2,000.00.